

Lintra Rodless Cylinders
Non-magnetic and Magnetic Piston
Double Acting
Ø 16 to 80 mm

- **New lightweight design extrusion with integral slots for switch mounting**
- **Capable of withstanding large bending moments and lateral forces**
- **Left hand end cover incorporates alternative ports to allow both air connections to be made at one end**
- **Built-in guidance with internal and adjustable external options**

Technical Data

Medium:

Compressed air, filtered, lubricated or non-lubricated

Operation:

M/46000, M/46100, M/46200

Double acting with adjustable cushioning

M/46000/M, M/46100/M, M/46200/M

Double acting with adjustable cushioning and magnetic piston

Models:

M/46000 with internal guide

M/46100 with external adjustable guide

M/46200 with roller guided carriage

Operating Pressure:

1 to 10 bar (1,5 - 10 bar for Ø 16 mm)

Operating Temperature:

-30°C* to +80°C max.

* Consult our Technical Service for use below +2°C

Cylinder Diameters:

16, 20, 25, 32, 40, 50, 63, 80 mm

Standard Strokes:

Made to order

Maximum Strokes:

Ø 16 to 40 mm 8500 mm

Ø 50 and 63 mm 7000 mm

Ø 80 mm 5500 mm

Materials:

Ø 16 mm moulded plastic end covers and yoke

Ø 20 mm anodised aluminium end covers, moulded plastic yoke

Ø 25 to 80 mm anodised aluminium end covers and yoke

Ø 16 to 80 mm anodised aluminium carriage, special anodised extruded aluminium alloy cylinder barrel, polyurethane sealing strip and piston seals, polyamide cover strip, nitrile rubber seals

Alternative Cylinders:

See page N 1.6.002.02

Heavy duty cylinders N 1.6.015.01



Ordering Information

To order an internally guided cylinder 40 mm bore

with a 6000 mm stroke quote: M/46040/6000

To order an externally guided cylinder 50 mm bore

with a 7000 mm stroke quote: M/46150/7000

To order mountings refer to appropriate tables.

Order magnetically operated switches separately.

Accessories

See page

Switches QM/45/RAP, QM/45/LAP

QM/45/LSU

N 4.3.045.01

Switch QM/45/EAP

N 4.3.047.01

Switches QM/33, QM/34

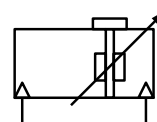
N 4.3.051.01

Switches QM/134, QM/134/N

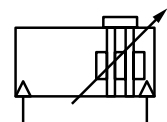
N 4.3.055.01

Shock absorbers for Ø 25 to 63 mm N 1.11.011.01

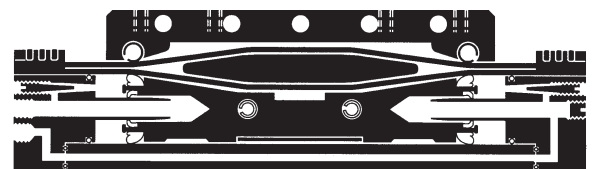
Shock absorbers for Ø 80 mm N 1.11.031.01



Non-magnetic piston



Magnetic piston





Alternative Cylinders

Symbol	Model (non-magnetic piston)	Symbol	Model (magnetic piston)	Description
	M/46000/IC M/46100/IC M/46200/IC		M/46000/MC M/46100/MC M/46200/MC	Lintra rodless cylinders (Ø 25 to 63 mm) with alternative ports Dimensions see page N 1.6.002.06
	M/46000/ID M/46100/ID M/46200/ID		M/46000/MD M/46100/MD M/46200/MD	Lintra rodless cylinders with double carriages Dimensions see page N 1.6.002.07
	M/46000/L1		M/46000/L3	Active holding brake for Ø 25 to 63 mm. Applying pressure activates the brake. The brake lining is pushed against a stainless steel strip. To release, depressurize. Operating Pressure: 2 to 10 bar Dimensions see page N 1.6.002.07
	M/46000/L2		M/46000/L4	Passive holding brake for Ø 25 to 63 mm. Applying pressure releases the brake. When the pressure is released the brake lining is pushed against the stainless steel strip by a spring loaded plate. Operating Pressure: 5 to 10 bar Dimensions see page N 1.6.002.07
	EQM/46000 EQM/46100 EQM/46200		EQM/46000/M EQM/46100/M EQM/46200/M	Lintra rodless cylinders (Ø 25 to 63 mm) with valve adaptors. Dimensions see page N 1.6.002.13

Theoretical Forces • Cushion lengths • Holding Forces

Ø mm	Theoretical forces (N) at 6 bar	Air consumption (l/cm) per stroke at 6 bar	Cushion length (mm)	Holding forces (N) of the brake (on dry braking surface)	
				ACTIVE (L1 + L3) at 6 bar	PASSIVE (L2 + L4)
16	120	0,014	12	-	-
20	188	0,022	26	-	-
25	294	0,035	26	500	220
32	482	0,056	35	900	375
40	754	0,088	50	1500	630
50	1178	0,137	60	2500	1000
63	1870	0,218	70	4000	1650
80	3016	0,350	75	-	-

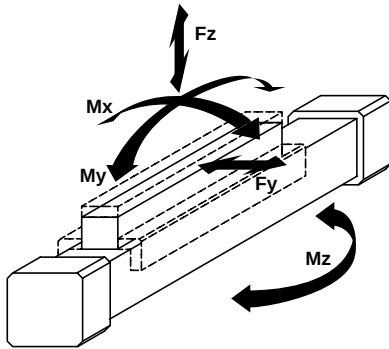
Weights of Cylinders and Right Angle Adaptors (kg)

Model	M/46000	M/46100	M/46200	M/46100/ID	M/46000/L1, M/46000/L3	M/46000/L2, M/46000/L4		Right angle adaptor Ø/Ø	Weight (kg)	Right angle adaptor Ø/Ø	Weight (kg)
Ø mm	Weight at 0 mm	Weight at 0 mm	Weight at 0 mm	Weight at 0 mm	Weight at 0 mm	Weight at 0 mm	Weight per 100 mm				
16	0,16	0,18	-	0,2	-	-	0,10	25/25	1,1	40/25	1,4
20	0,5	0,6	-	0,8	-	-	0,15	32/32	1,5	50/32	1,8
25	0,8	0,9	1,7	1,2	1,6	1,9	0,2	40/40	2,7	63/40	3,8
32	1,6	1,7	3,1	2,2	2,7	3,1	0,35	50/50	3,6	40/25	2,5
40	2,7	2,9	5,0	3,6	4,5	5,2	0,5	25/20	1,0	63/40	4,0
50	4,8	4,9	9,1	6,0	7,3	8,9	0,75	32/25	1,3		
63	7,2	7,7	13,9	9,6	11,5	12,4	1,0				
80	13,2	13,4	-	15,9	-	-	1,5				

Weights of Mountings and Accessories (kg)

Ø mm	Style 'C'	Style 'S'	Style 'UV'	Style 'V'	Style 'W'	Style 'UW'	Assembly kit for valves	Assembly kit for shock absorbers	Bracket for switches	Cover kg/m
16	0,010	0,020	0,100	0,010	0,040	-	-	-	0,008	0,150
20	0,030	0,100	0,200	0,030	0,190	0,250	-	-	0,008	0,150
25	0,010	0,200	0,300	0,040	0,270	0,330	0,560	0,110	0,008	0,150
32	0,100	0,300	0,400	0,070	0,500	0,500	0,800	0,140	0,050	0,150
40	0,200	0,300	0,800	0,200	0,650	1,080	1,150	0,350 (0,300)*	0,050	0,150
50	0,300	0,500	1,200	0,200	1,100	1,850	1,600	0,490 (0,400)*	0,050	0,150
63	0,400	0,500	2,000	0,300	1,900	3,460	2,100	0,580 (0,600)*	0,050	0,150
80	0,400	0,500	2,900	0,400	2,500	-	-	0,990	0,050	0,150

* () = for plate see N 1.6.002.012 item 2



Loading values for Lintra cylinders

The values given in the table below show the single forces in the directions Fy and Fz and the maximum moments Mx, My and Mz. All values are applicable only for speeds of max. 0,2 m/s. A requirement for using these values is a constant movement (no jerking) of the mass over the whole stroke length of the cylinder. The reference point from which the moments for all cylinders should be calculated is the centreline of the piston.

For speeds up to 2 m/s please use our calculation programme PNEUCALC. It is available upon request. PNEUCALC is suitable for all PC's having MS-DOS 3.1 and higher.

Total loads

When a Lintra cylinder has to take several loads and moments, an additional calculation is necessary using this formula:

$$\frac{Mx}{Mx \text{ max}} + \frac{My}{My \text{ max}} + \frac{Mz}{Mz \text{ max}} + \frac{Fy}{Fy \text{ max}} + \frac{Fz}{Fz \text{ max}} \leq 1$$

Ø mm	Internal guide, M/46000					External guide, M/46100			Roller guide, M/46200			
	Fy (N)	Fz (N)	Mx (Nm)	My (Nm)	Mz (Nm)	Fy, Fz (N)	Mx (Nm)	My, Mz (Nm)	Fy (N)	Fz (N)	Mx (Nm)	My, Mz (Nm)
16	40	120	0,3	3,8	1,1	200	2	5,5	-	-	-	-
20	90	280	0,9	12	3,6	470	6	18	-	-	-	-
25	110	350	1,3	19	5,6	590	9	28	590	1180	13	42
32	150	460	2,5	30	8,6	780	17	43	780	1560	25	64
40	300	900	5,8	77	22	1500	39	110	1500	3000	58	160
50	400	1200	9,8	110	32	2000	65	160	2000	4000	97	240
63	640	1900	18	240	70	3200	120	350	3200	6400	180	520
80	780	2300	27	360	100	3900	180	520	-	-	-	-

Loading values applicable to a speed of ≤ 0,2 m/s. Maximum working life is normally reached below a speed of 1 m/s.

Loading values for Lintra cylinders with externally guided secondary carriage

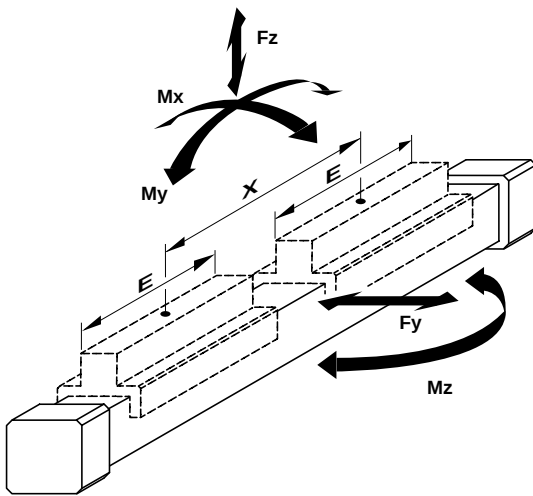
The values given in the table below show the single forces in the directions Fy and Fz and the maximum moments Mx, My and Mz. All values are applicable only for speeds of max. 0,2 m/s. A requirement for using these values is a constant movement (no jerking) of the mass over the whole stroke length of the cylinder. The reference point from which the moments for all cylinders should be calculated is the centreline of the pistons.

For speeds up to 2 m/s please use our calculation programme PNEUCALC. It is available upon request. PNEUCALC is suitable for all PC's having MS-DOS 3.1 and higher.

Total loads

When a Lintra cylinder has to take several loads and moments, an additional calculation is necessary using this formula:

$$\frac{Mx}{Mx \text{ max}} + \frac{My}{My \text{ max}} + \frac{Mz}{Mz \text{ max}} + \frac{Fy}{Fy \text{ max}} + \frac{Fz}{Fz \text{ max}} \leq 1$$



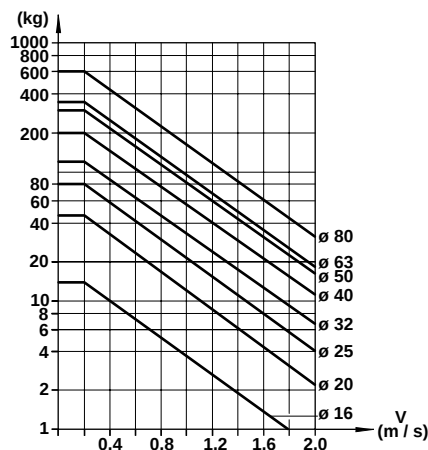
Ø mm	External guide, M/46100/ID and M/46100/MD											
	Fy, Fz (N)	Mx (Nm)	My, Mz (Nm) x min. = E	x = 100 mm	x = 150 mm	x = 200 mm	x = 250 mm	x = 300 mm	x = 350 mm	x = 400 mm	x = 450 mm	x = 500 mm
16	400	4	14	17	23	29	35	41	48	54	60	66
20	940	12	64	-	80	99	119	139	158	178	197	217
25	1180	18	96	-	106	131	155	180	205	230	255	279
32	1560	34	155	-	-	181	213	246	278	310	343	375
40	3000	78	393	-	-	-	435	496	557	618	679	740
50	4000	130	457	-	-	-	457	518	579	639	700	761
63	6400	240	1280	-	-	-	-	-	1360	1500	1630	1770
80	7800	360	1910	-	-	-	-	-	-	1940	2110	2270

Loading values applicable to a speed of ≤ 0,2 m/s. Maximum working life is normally reached below a speed of 1 m/s.

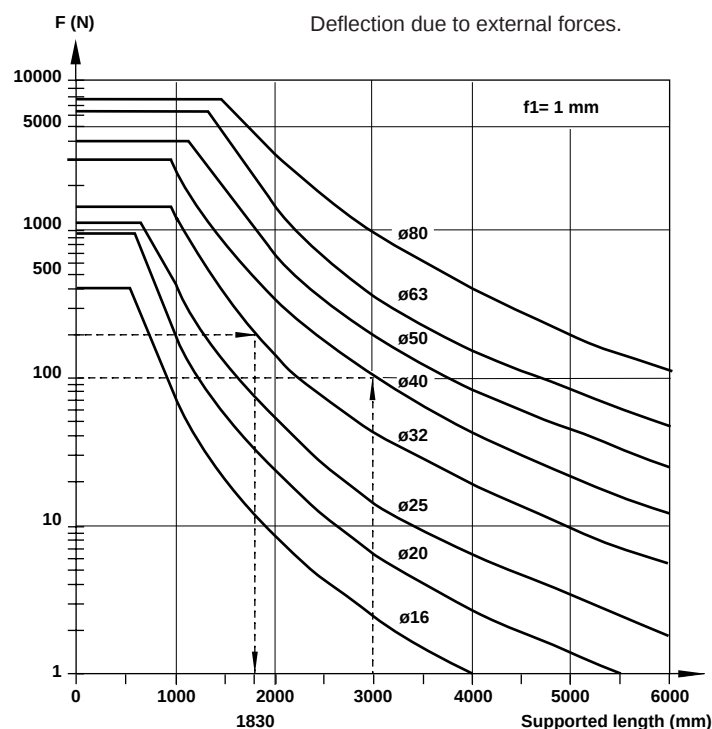


Cushioning Performance

The dynamic energy of a Lintra cylinder is caused by direct or partial external loads which must be absorbed by pneumatic cushioning. The cushioning ability depends to a large extent on the pneumatic circuit (e. g. counter pressure, pre-exhaust). The values given in the diagram were tested with an operation pressure of 6 bar using a 5/2 control valve. When installed horizontally, depending upon the speed, dynamic energy can be absorbed by the cylinder. Whenever the values given in the diagram are exceeded, the transported mass must be cushioned by additional shock absorbers. These have to be located at the center of gravity of the mass.

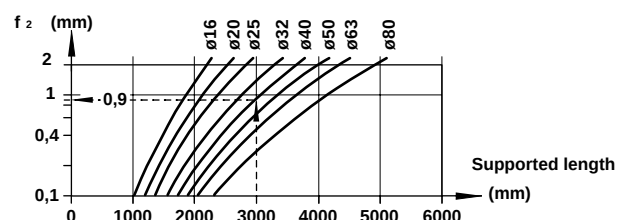


Cylinder Deflection



Example:
Cylinder Ø 32 mm, stroke length 3500 mm, external load 200 N
Maximum distance between supports = 1830 mm (see diagramme).
Therefore an additional support is required.

Deflection due to cylinder weight.



Example:

Cylinder Ø 40 mm, external force 180 N, distance between supports 3000 mm

Required: Total deflection

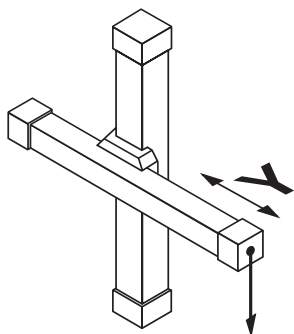
1. Deflection due to external force:
See diagram → (1mm/100 N) · 180 N 1,8 mm
2. Deflection due to cylinder weight: See diagramme → + 0,9 mm

Total deflection: 2,7 mm

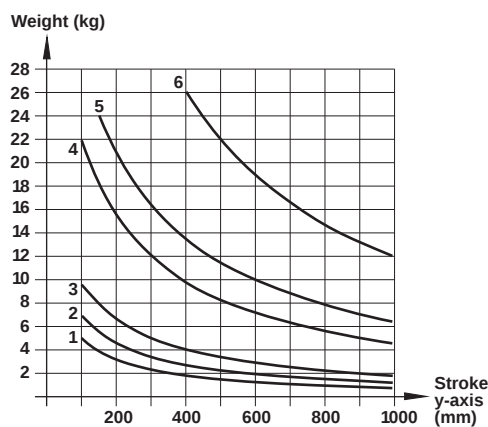
Maximum permitted deflection ($f_1 + f_2$) < 1 mm per 1000 mm stroke

A deflection of more than 3 mm is not permitted.

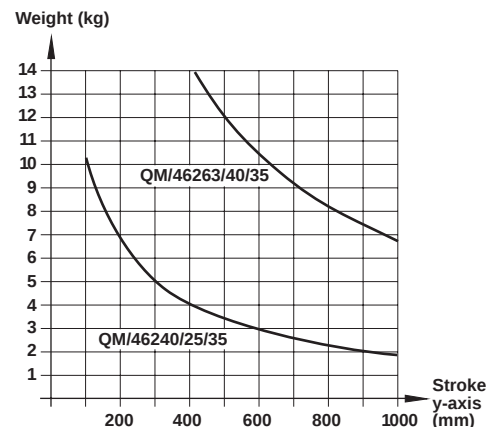
Maximum load right angle mounting system



Externally guided



Roller guided

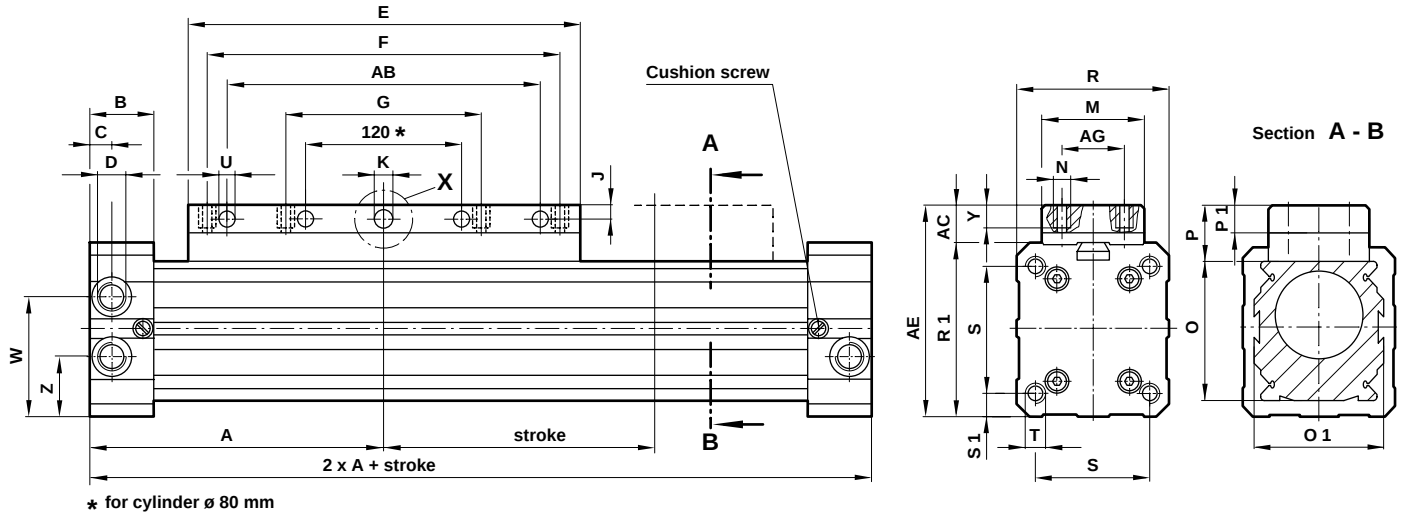


1	QM/46125/20/33	4	QM/46140/40/33 · QM/46163/40/33
2	QM/46125/25/33 · QM/46132/25/33 · QM/46140/25/33	5	QM/46150/50/33
3	QM/46132/32/33 · QM/46140/32/33 · QM/46150/32/33	6	QM/46163/63/33

Loading values applicable to a speed of ≤ 0,2 m/s.



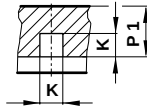
Basic Dimensions M/46000, Cylinders with Internal Guide



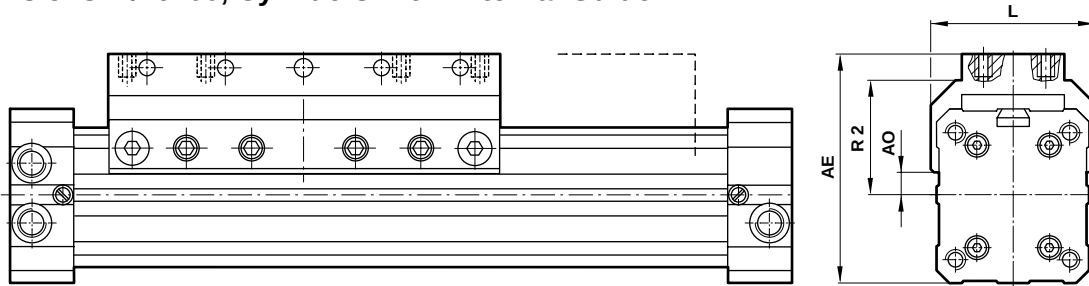
* for cylinder $\varnothing 80$ mm

View X

For cylinders
M/46025 to M/46063



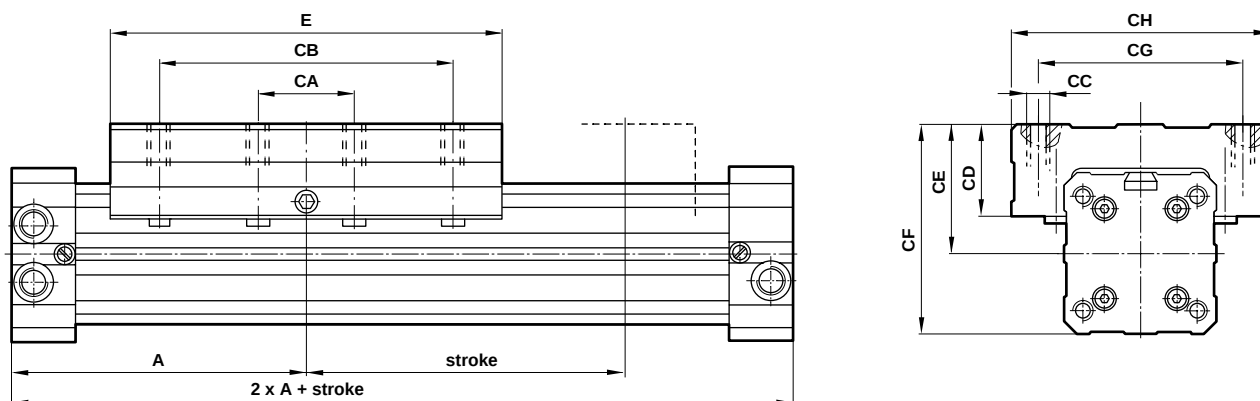
Dimensions M/46100, Cylinders with External Guide



Model	46016	46116	46020	46120	46025	46125	46032	46132	46040	46140	46050	46150	46063	46163	46080	46180
$\varnothing$	16		20		25		32		40		50		63		80	
A	62,5		85		100		120		150		180		215		260	
AB	-		-	60	-	70	-	90	-	120	-	160	-	190	-	240
AC	8,5	-	14	-	12	-	16	-	15	-	20	-	20	-	24	-
AE	38		54	59	60	67,5	76	82	90	97,5	110	117	125	137	154	165
AG	8		18		20		25		25		25		25		25	
AO	-	7,5	-	6,5	-	9,5	-	15,5	-	16,5	-	24	-	25,5	-	38
B	17,5		23		23		27		30		35		40		45	
C	8		8		14,5		10,5		11,5		14		17		17	
D	M 5		G1/8		G1/8		G1/4		G1/4		G3/8		G1/2		G1/2	
E	80		110		130		160		215		250		320		390	
F	60		80		90		120		160		190		240		300	
G	-		40		45		60		80		95		120		150	
J	2,5	-	3,5	7,5	-	5	-	5	-	5	-	6,5	-	7,5	9	10
K	$\varnothing 3^{G7}$	-	$\varnothing 4,2^{H9}$	$\varnothing 5,5$	$\square 4,5$	$\varnothing 5,5$	$\square 6$	$\varnothing 5,5$	$\square 6$	$\varnothing 6,6$	$\square 8$	$\varnothing 9$	$\square 8$	$\varnothing 9$	$\varnothing 12^{G7}$	
L	-	31	-	42	-	52	-	64	-	79	-	92	-	110	-	130
M	18		27		32		45		45		50		50		50	
N	M 3		M 5		M 5		M 5		M 6		M 8		M 8		M 10	
O	25		32		40		52		65		80		95		120	
O 1	26		32		40		52		65		80		95		120	
P	12	-	18,5	-	16	-	20	-	20	-	25	-	25	-	29	-
P 1	-		-		7,5	-	10	-	10	-	13	-	14	-	-	
R	27		40		48		60		75		90		105		130	
R 1	31		40		48		60		75		90		105		130	
R 2	-	18,5	-	24	-	34	-	42,5	-	49,5	-	58,5	-	68	-	81
S	16		32		37		47		58		70		84		100	
S 1	5,5		4		5,5		6,5		8,5		10		10,5		15	
T	M 3-5 deep		M 5-12 deep		M 5-13 deep		M 6-15 deep		M 8-20 deep		M 8-25 deep		M 10-25 deep		M 12-25 deep	
$\varnothing U$	-		-	5,5	-	5,5	-	5,5	-	6,6	-	9	-	9	-	11
W	-		-		33		40		50		60		70		90	
Y	4	5	12		7	12	8	12	8	12	11	17	11	20	15	25
Z	16,5		21,5		17		20		25		30		35		40	



Dimensions M/46200, Cylinders with Roller Guided Carriage



For full dimensions see page N 1.6.002.05

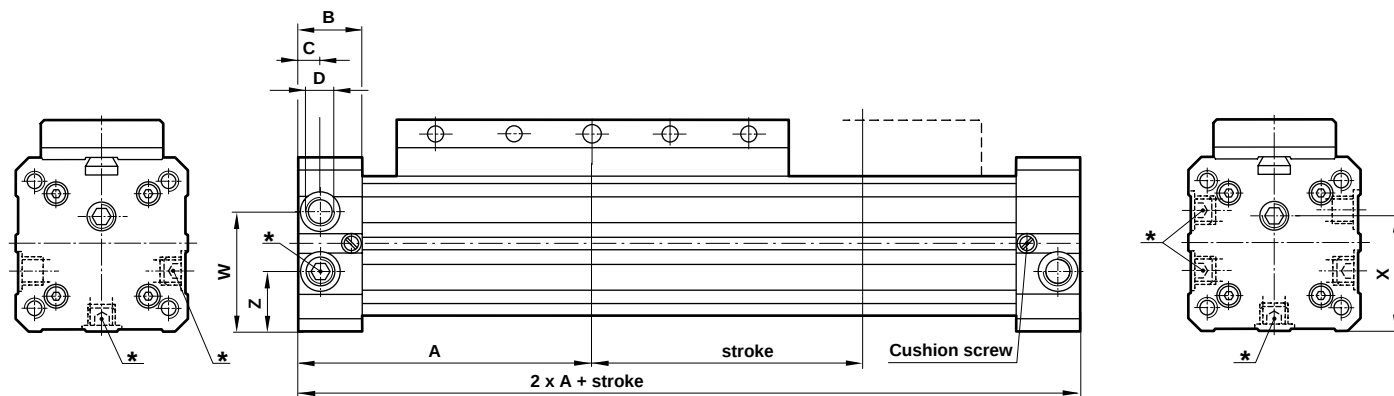
Model	46225	46232	46240	46250	46263
Ø	25	32	40	50	63
A	100	120	150	180	215
CA	45	60	80	90	120
CB	90	120	150	180	240
CC	M 6 - 14 deep	M 8 - 16 deep	M 8 - 16 deep	M 10 - 20 deep	M 10 - 20 deep
CD	36	38	42	44	47
CE	42	50	57,5	67	74,5
CF	66	80	95	112	127
CG	60	75	92	100	110
CH	85	98	118	132	140
E	130	160	215	250	320

To order a cylinder with roller guided carriage, Ø 32 mm and 800 mm stroke

Quote: M/46232/800

Dimensions M/46000/IC, .../MC; M/46100/IC, .../MC; M/46200/IC, .../MC; Cylinders with Alternative Ports

For cylinders M/46000, .../M (with internal guide), M/46100, .../M (with external guide) and M/46200, .../M (with roller guided carriage)



* Alternative ports with inserted plugs.

For full dimensions see page N 1.6.002.05

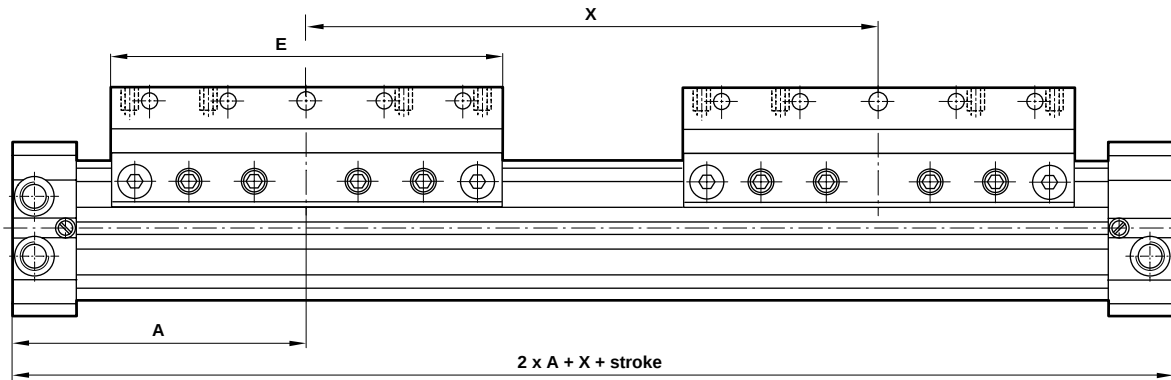
Model	46025, 46125, 46225	46032, 46132, 46232	46040, 46140, 46240	46050, 46150, 46250	46063, 46163, 46263
Ø	25	32	40	50	63
A	100	120	150	180	215
B	23	27	30	35	40
C	14,5	10,5	11,5	14	17
D	G 1/8	G 1/4	G 1/4	G 3/8	G 1/2
W	33	40	50	60	70
X	33	34,5	43,5	53,5	61,5
Z	17	20	25	30	35

To order a external guided cylinder with alternative ports, Ø 25 mm and 300 mm stroke

Quote: M/46125/IC/300



Dimensions M/46100/ID and M/46100/MD, Cylinders with Double Carriages

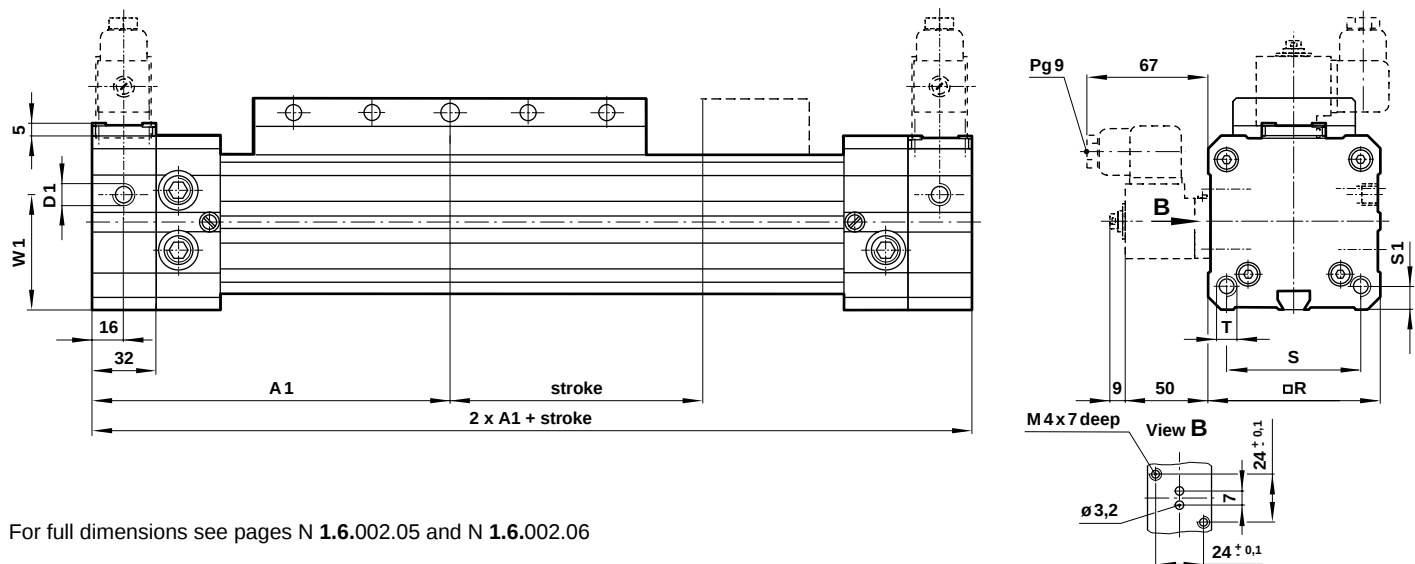


For full dimensions see page N 1.6.002.05

Model	46116	46120	46125	46132	46140	46150	46163	46180
Ø	16	20	25	32	40	50	63	80
A	62,5	85	100	120	150	180	215	260
E	80	110	130	160	215	250	320	390
X min.	80	110	130	160	215	250	320	390
X max.	500	500	500	500	500	500	500	500

To order an externally guided cylinder with double carriages, Ø 50 mm and 500 mm stroke, dimension 'X' = 200 mm
Quote: M/46150/ID/500/200

Dimensions EQM/46000, .../M; EQM/46100, .../M; EQM/46200/, .../M; Cylinders with Valve Adaptors (order the Excel valves, Model V05X486M-B63*A page N 5.4.042.01, separately) For cylinders M/46000, .../M (with internal guide), M/46100, .../M (with external guide) and M/46200, .../M (with roller guided carriage)



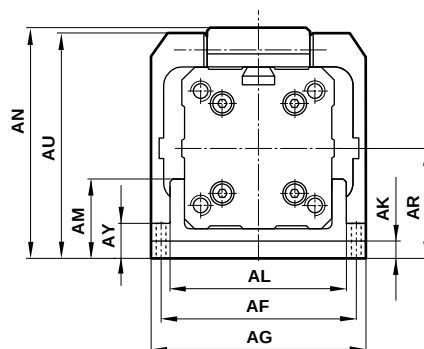
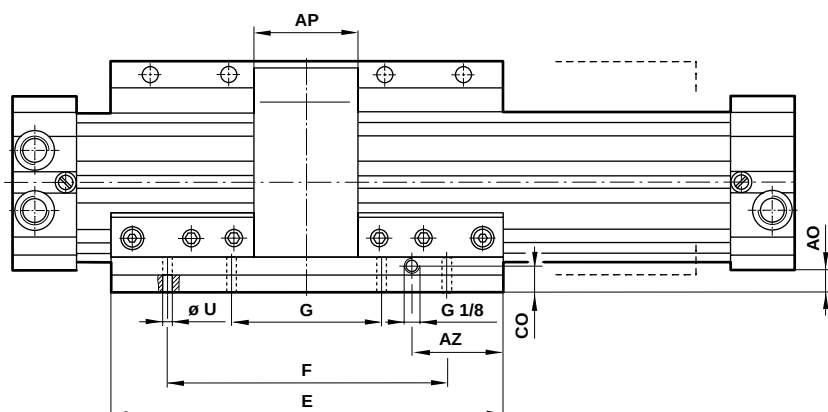
For full dimensions see pages N 1.6.002.05 and N 1.6.002.06

Model	46025, 46125, 46225	46032, 46132, 46232	46040, 46140, 46240	46050, 46150, 46250	46063, 46163, 46263
Assembly kit valve adaptors	QM/46025/76	QM/46032/76	QM/46040/76	QM/46050/76	QM/46063/76
Ø	25	32	40	50	63
A 1	132	152	182	212	247
D 1	G 1/8	G 1/8	G 1/8	G 1/8	G 1/8
□ R	48	60	75	90	105
S	37	47	58	70	84
S 1	5,5	6,5	8,5	10	10,5
T	M 5 x 13 deep	M 6 x 15 deep	M 8 x 20 deep	M 8 x 25 deep	M 10 x 25 deep
W 1	33	34,5	43,5	53,5	61,5

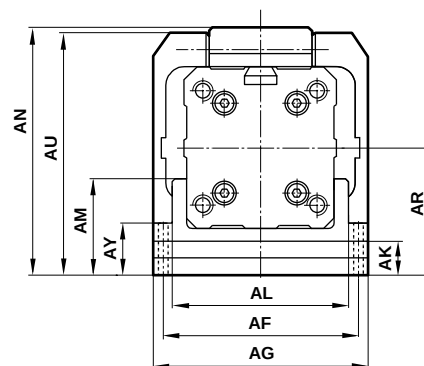
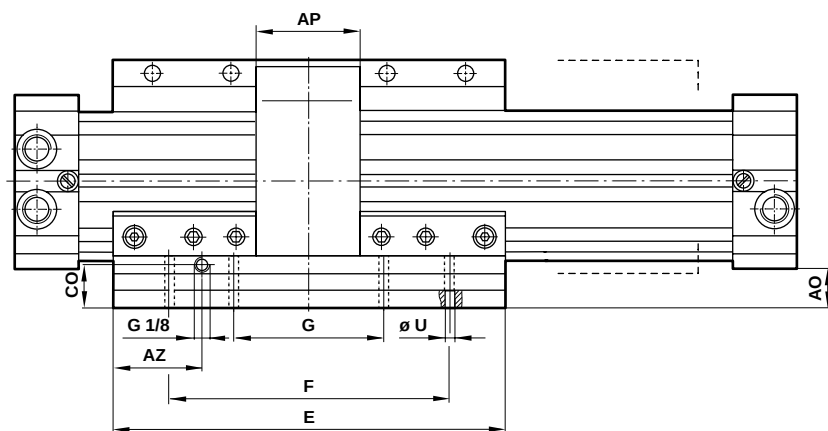
To order an internally guided cylinder with valve adaptors, Ø 63 mm and 1000 mm stroke
Quote: EQM/46063/1000



Dimensions M/46000/L1 and M/46000/L3, Cylinders with Active Holding Brake



Dimensions M/46000/L2 and M/46000/L4, Cylinders with Passive Holding Brake



For full dimensions see page N 1.6.002.05

Model	46025/L1 46025/L3	46025/L2 46025/L4	46032/L1 46032/L3	46032/L2 46032/L4	46040/L1 46040/L3	46040/L2 46040/L4	46050/L1 46050/L3	46050/L2 46050/L4	46063/L1 46063/L3	46063/L2 46063/L4
Ø	25		32		40		50		63	
AF	62		78		94		112		132	
AG	75		92		112		132		150	
AK	12	22	12	24	12	24	12	30	12	30
AL	52		64		81		94		112	
AM	28,5	38,5	29	41	34,5	46,5	35,5	53,5	42,5	60,5
AN	73,5	83,5	90	102	103,5	115,5	124,5	142,5	140,5	158,5
AO	13,5	23,5	14	26	13,5	25,5	14,5	32,5	15,5	33,5
AP	45		55		65		75		90	
AR	37,5	47,5	44	56	51	63	59,5	77,5	68	86
AU	73	83	89,5	101,5	103	115	124	142	140	158
AY	16,5	26,5	17,5	29,5	18	30	18,5	36,5	20,5	38,5
AZ	30		32,5		52,5		65		115	
CO	6	16	6	18	6	18	6	24	6	24
E	130		160		215		250		320	
F	90		120		160		190		240	
G	45		60		80		95		120	
Ø U	6,6		9		9		11		13	

To order a cylinder with active holding brake and magnetic piston, Ø 50 mm and 1000 mm stroke

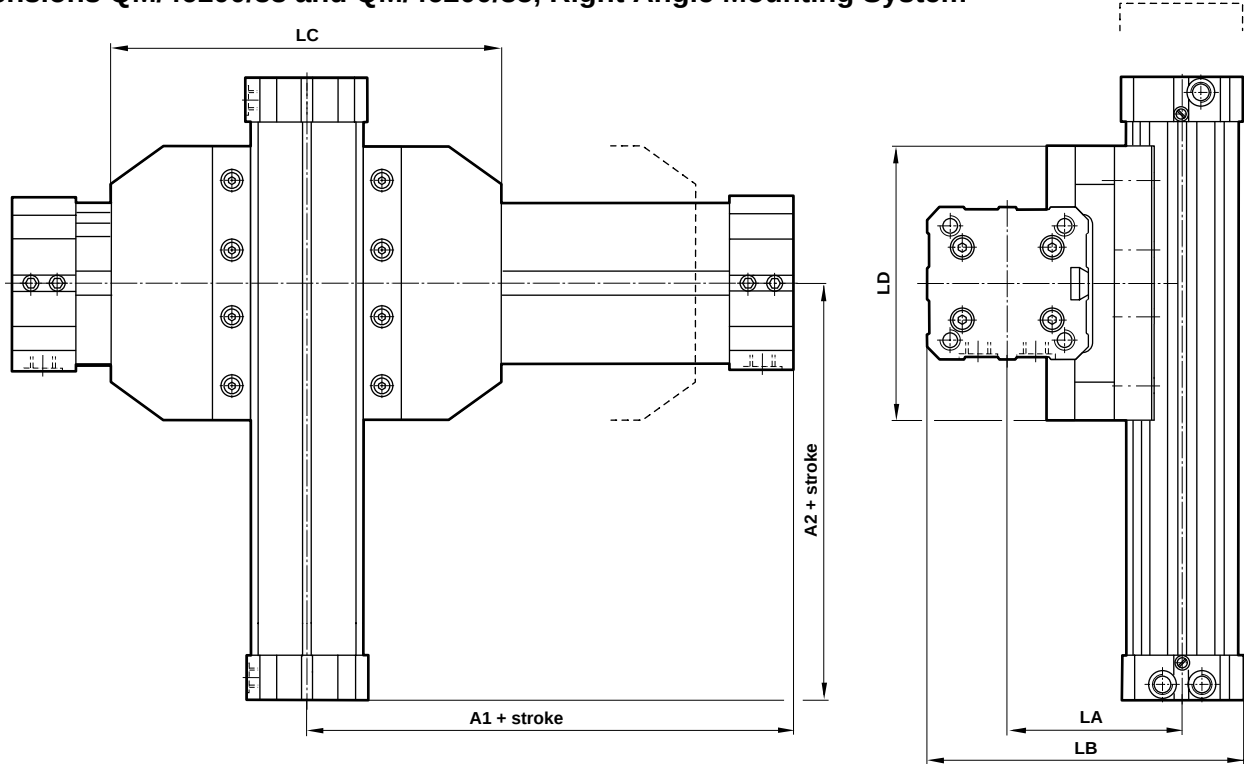
Quote: M/46050/L3/1000

To order a cylinder with passive holding brake, Ø 40 mm and 2000 mm stroke

Quote: M/46040/L2/2000



Dimensions QM/46100/33 and QM/46200/35, Right Angle Mounting System



For full dimensions see page N 1.6.002.05

Load values: For QM/46000/*/33 see basic cylinders M/46100, for QM/46200/*/35 see basic cylinders M/46200

Right Angle Mounting System Externally Guided

Same Size Cylinder System Style 'X'

Ø	Model (non-magnetic piston)	Model (magnetic piston)	Right angle adaptor	A1+stroke	A2+stroke	LA	LB	LC	LD
25	QM/46025/*/33	QM/46025/M/*/33	QM/46125/25/33	100	100	69	117	130	130
32	QM/46032/*/33	QM/46032/M/*/33	QM/46132/32/33	120	120	84	144	160	160
40	QM/46040/*/33	QM/46040/M/*/33	QM/46140/40/33	150	150	97	172	215	215
50	QM/46050/*/33	QM/46050/M/*/33	QM/46150/50/33	180	180	116	206	250	250

* Insert stroke length. To order Right Angle Mounting System for same size cylinders, Style 'X', order two cylinders of the same bore size together with one Right Angle Adaptor, e.g. 2 off QM/46040/*/33 and 1 off QM/46140/40/33.

1st Reduction System Style 'X1'

Ø	Model (non-magnetic piston)	Model (magnetic piston)	Right angle adaptor	A1+stroke	A2+stroke	LA	LB	LC	LD
25	QM/46025/*/33	QM/46025/M/*/33	QM/46125/20/33	100	85	62	105,5	130	110
32	QM/46032/*/33	QM/46032/M/*/33	QM/46132/25/33	120	100	76,5	130,5	160	130

* Insert stroke length. To order a 1st Reduction Right Angle Mounting System for cylinders of the next bore size smaller, Style 'X1', order two cylinders of successive bore sizes together with one Right Angle Adaptor, e.g. 1 off QM/46025/*/33, 1 off QM/46020/*/33 and 1 off QM/46125/20/33

2nd Reduction System Style 'X2'

Ø	Model (non-magnetic piston)	Model (magnetic piston)	Right angle adaptor	A1+stroke	A2+stroke	LA	LB	LC	LD
40	QM/46040/*/33	QM/46040/M/*/33	QM/46140/25/33	150	100	77	138,5	215	130
50	QM/46050/*/33	QM/46050/M/*/33	QM/46150/32/33	180	120	94	169	250	160
63	QM/46063/*/33	QM/46063/M/*/33	QM/46163/40/33	215	150	108	198	320	215

* Insert stroke length. To order a 2nd Reduction Right Angle Mounting System for cylinders two bore sizes smaller, Style 'X2', order two cylinders of successive bore sizes together with one Right Angle Adaptor, e.g. 1 off QM/46040/*/33, 1 off QM/46025/*/33 and 1 off QM/46140/25/33

Right Angle Mounting System Roller Guided

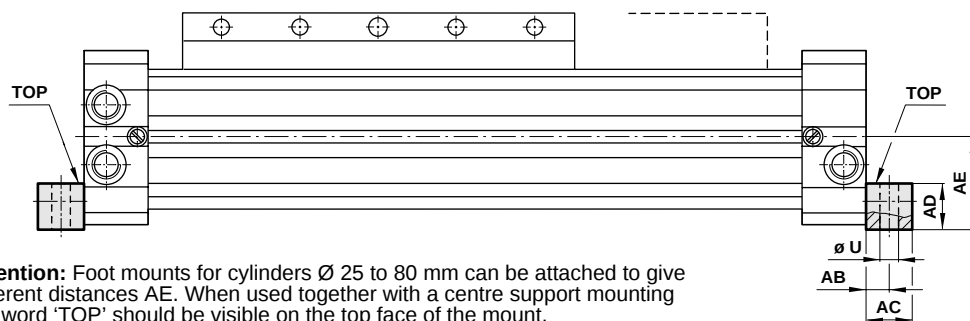
2nd Reduction System Style 'X2'

Ø	Models, non-magnetic piston	Models, magnetic piston	Right angle adaptor	A1+stroke	A2+stroke	LA	LB	LC	LD
40	QM/46240/*/35	QM/46240/M/*/35	QM/46240/25/35	150	100	80	141,5	215	130
63	QM/46263/*/35	QM/46263/M/*/35	QM/46263/40/35	215	150	108	198	320	215

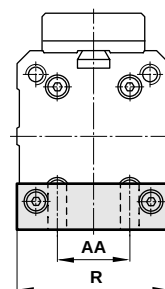
* Insert stroke length. To order a 2nd Reduction Right Angle Mounting System for cylinders two bore sizes smaller, Style 'X2', order two cylinders of successive bore sizes together with one Right Angle Adaptor, e.g. 1 off QM/46240/*/35, 1 off QM/46225/*/35 and 1 off QM/46240/25/35



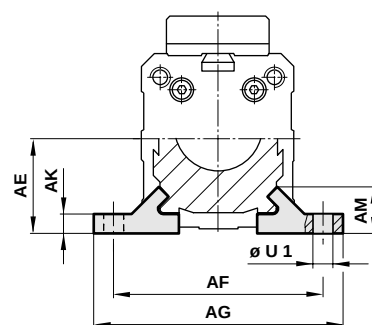
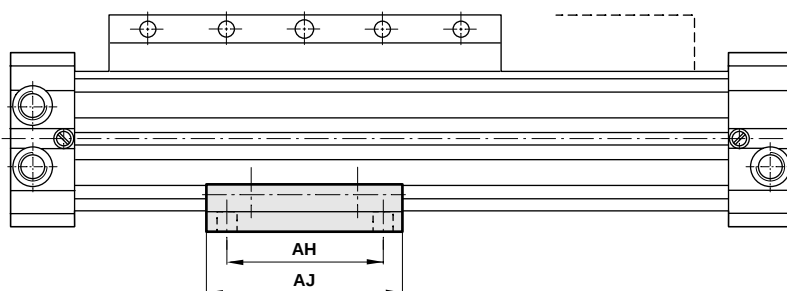
Foot Mounting Style 'C'



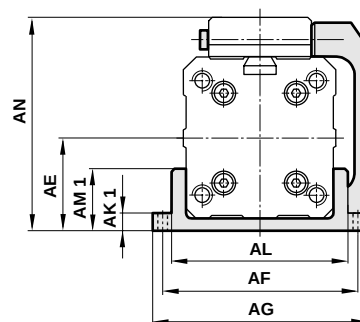
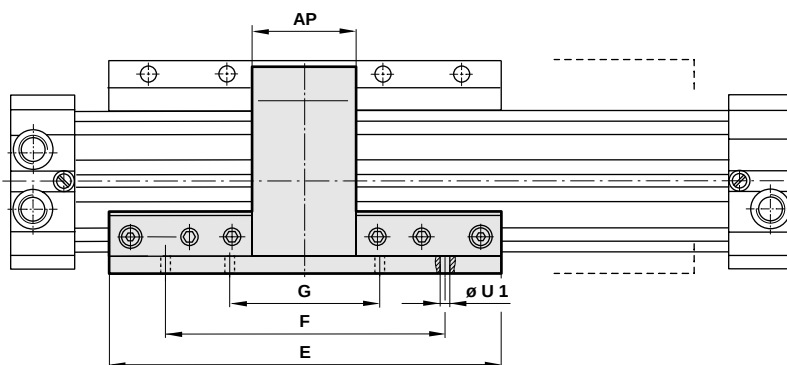
Attention: Foot mounts for cylinders Ø 25 to 80 mm can be attached to give different distances AE. When used together with a centre support mounting the word 'TOP' should be visible on the top face of the mount.



Centre Support Mounting Style 'V'



Carriage Mounting Plate Style 'UV'

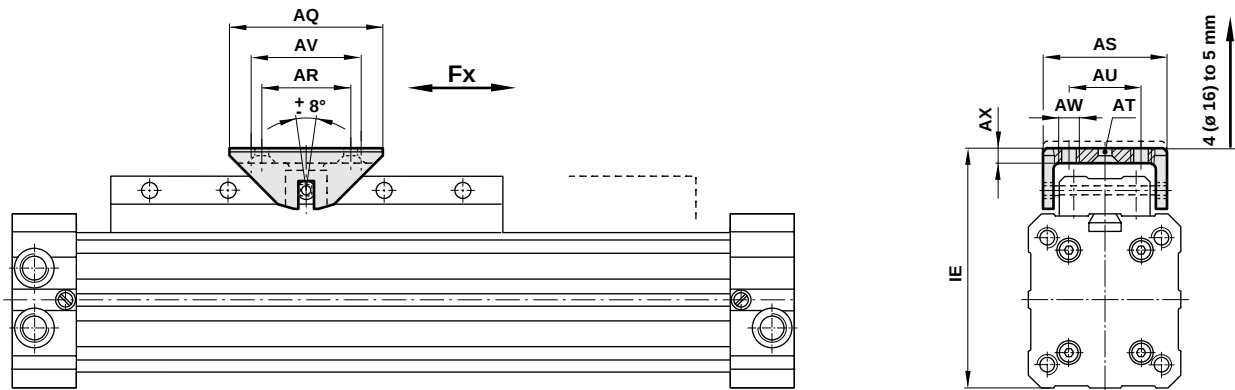


Model 'C'	QM/46016/21	QM/46020/21	QM/46025/21	QM/46032/21	QM/46040/21	QM/46050/21	QM/46063/21	QM/46080/21
Model 'UV'	QM/46016/34	QM/46020/34	QM/46025/34	QM/46032/34	QM/46040/34	QM/46050/34	QM/46063/34	QM/46080/34
Model 'V'	QM/46016/32	QM/46020/32	QM/46025/32	QM/46032/32	QM/46040/32	QM/46050/32	QM/46063/32	QM/46080/32
Ø	16	20	25	32	40	50	63	80
AA	16	17	18	26	30	42	48	64
AB	10	5	7	11	11	12	13	12,5
AC	15	10	15	22	22	25	25	25
AD	3	10	13,5	16,5	19,5	24	27,5	35
AE	16	21,5	24 (26,5)	30,5 (33)	37,5 (40,5)	45 (49)	54 (57,5)	70
AF	40	52	60	76 (78)	92 (94)	110 (112)	132	155
AG	50	62	72 (75)	92	108 (112)	128 (132)	154 (150)	180
AH	20	45	60	70	90	110	120	140
AJ	30	60	80	100	120	140	160	180
AK	3,5	4,5	5,5	6,5	7,5	7,5	9	12
AK 1	3,5	5,5	5,5	6,5	7,5	8	10	10
AL	31	42	52	64	81	94	112	132
AM	9	12	13	13,5	18,5	18,5	25	28,5
AM 1	8,5	14,5	17,5	18	24	25	32	32
AN	40,5	56	62,5	79	93	114	130	159
AP	30	36	45	55	65	75	90	100
E	80	110	130	160	215	250	320	390
F	60	80	90	120	160	190	240	300
G	-	40	45	60	80	95	120	150
R	27	40	48	60	75	90	105	130
Ø U	5,5	5,5	7	9	9	11	13	14
Ø U 1	5,5	5,5	6,6	9	9	11	13	14

(): Figures in brackets apply for carriage mounting plate Style 'UV'.

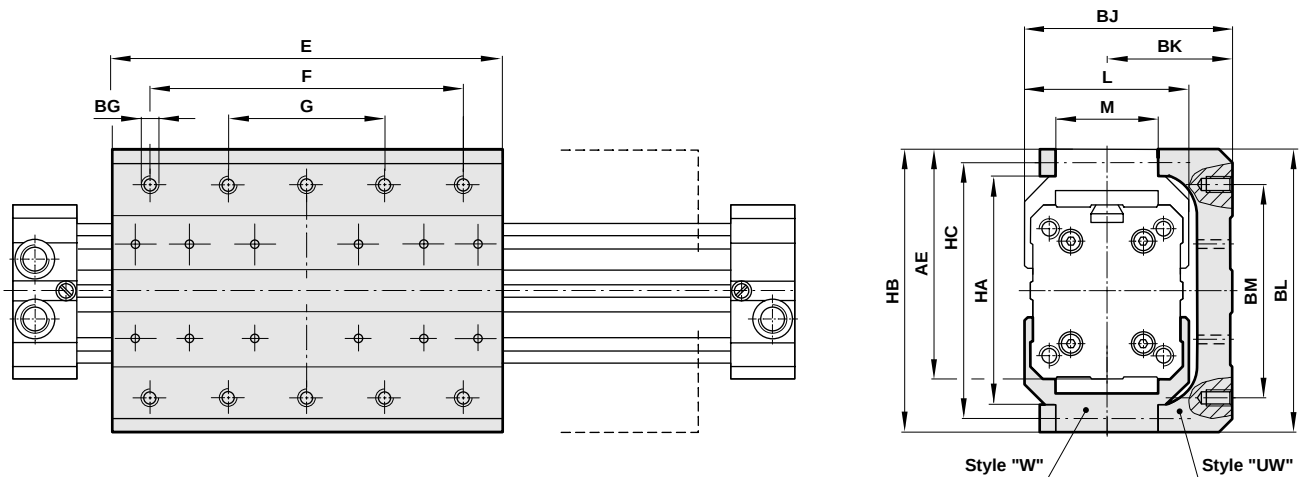


Swinging Bridge Mounting Style 'S'



Model 'S'	QM/46016/37	QM/46020/37	QM/46025/37	QM/46032/37	QM/46032/37	QM/46050/37	QM/46050/37	QM/46080/37
Ø	16	20	25	32	40	50	63	80
AQ	40	50	60	80	80	100	100	100
AR	-	35	40	50	50	60	60	60
AS	26	38	44	59	59	65	65	65
AT	-	DIN 74 - Bm 5	DIN 74 - Bm 5	DIN 74 - Bm 6	DIN 74 - Bm 6	DIN 74 - Bm 8	DIN 74 - Bm 8	DIN 74 - Bm 8
AU	12	20	20	30	30	40	40	40
AV	30	40	45	60	60	80	80	80
AW	M 4	M 5	M 5	M 6	M 6	M 8	M 8	M 8
AX	4	5	5	5,5	5,5	6,5	6,5	6,5
IE	48 + 4	65,5 + 5	70 + 5	88,5 + 5	102,5 + 5	124 + 5	139 + 5	168,5 + 5
Fx (N)	100	150	250	410	640	1000	1500	2400

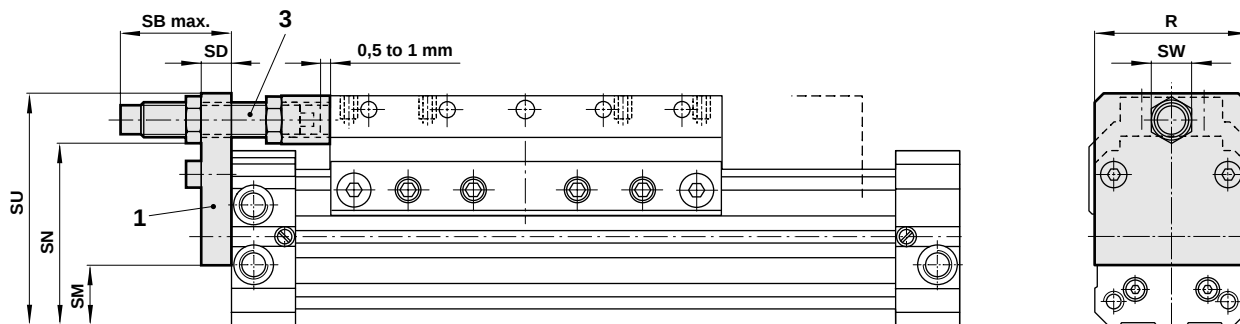
Secondary Carriage (Carriage Free) Style 'W' Side Mounting Plate Style 'UW'



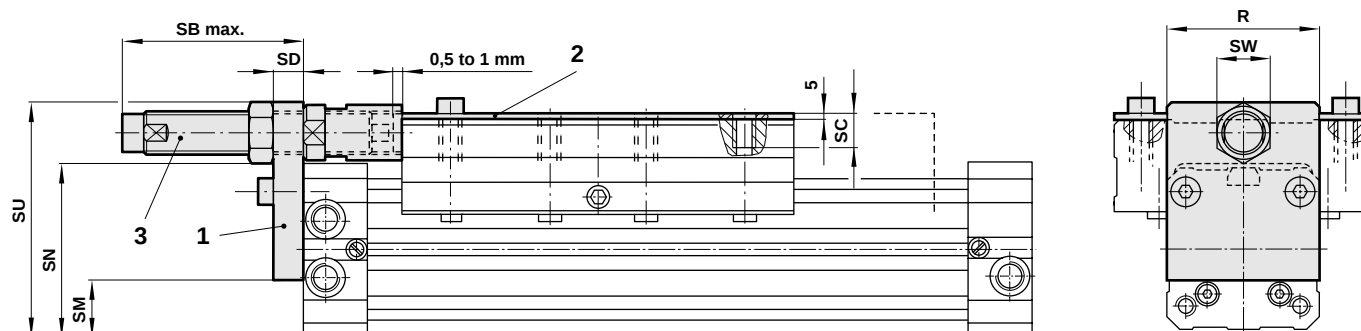
Model 'W'	QM/46116/35	QM/46120/35	QM/46125/35	QM/46132/35	QM/46140/35	QM/46150/35	QM/46163/35	QM/46180/35
Model 'UW'		QM/46120/36	QM/46125/36	QM/46132/36	QM/46140/36	QM/46150/36	QM/46163/36	
Ø	16	20	25	32	40	50	63	80
AE	38	59	67,5	82	97,5	117	137	165
BG		M 5 x 10 deep	M 5 x 10 deep	M 5 x 12 deep	M 6 x 12 deep	M 6 x 15 deep	M 8 x 20 deep	
BJ		54	63	77	98	117,5	139,5	
BK		33	37	45	58,5	71,5	84,5	
BL		78	86	103	119	143	168	
BM		55	65	80	90	120	140	
E	80	110	130	160	215	250	320	390
F		80	90	120	160	190	240	
G		40	45	60	80	95	120	
HA		64	77	94	110	131	153	
HB	49	79	87	104	120	144	169	200
HC		64	77	94	110	131	154	
L		42	52	64	79	92	110	
M	18	27	32	45	45	50	50	50

**Assembly Kit Shock Absorber (order plate and shock absorbers separately)**

For cylinders M/46100, M/46100/M



For cylinder M/46200, M/46200/M



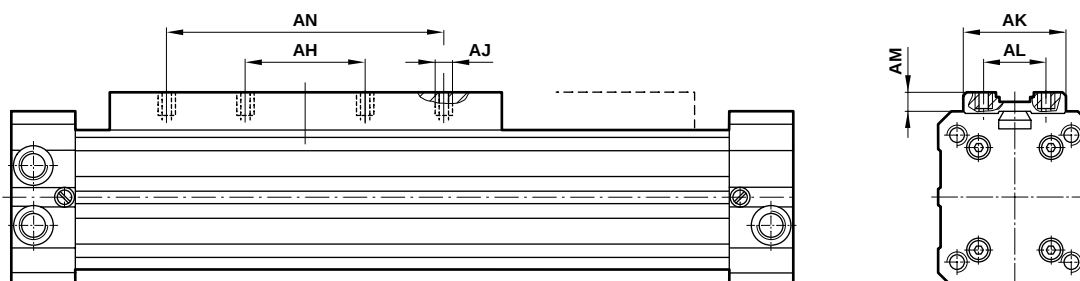
Cylinder	Ø	Assembly kit shock absorber Item 1	Plate ** Item 2	Shock absorber ** Item 3	R	SB	SD	SC	SM	SN	SU	SW
M/46125	25	QM/46125/67		M/59614/AX, .. /BX, .. /CX	48	45,5	12		19	49	69,5	17
M/46132	32	QM/46132/67		M/59614/AX, .. /BX, .. /CX	60	40,5	12		24	61	81,5	17
M/46140	40	QM/46140/67		M/59625/AX, .. /BX, .. /CX	75	81,5	15		29	74	109,5	30
M/46150	50	QM/46150/67		M/59625/AX, .. /BX, .. /CX	90	69	15		33	91	127,5	30
M/46163	63	QM/46163/67		M/59625/AX, .. /BX, .. /CX	105	69	15		41	105,5	141,5	30
M/46180	80	QM/46180/67		M/59833/..	130	85	20		53	130,5	173,5	Ø 40
M/46225	25	QM/46125/67		M/59614/AX, .. /BX, .. /CX	48	45,5	12		19	49	69,5	17
M/46232	32	QM/46132/67		M/59614/AX, .. /BX, .. /CX	60	40,5	12		24	61	81,5	17
M/46240	40	QM/46140/67	M/P41434	M/59625/AX, .. /BX, .. /CX	75	81,5	15	31	29	74	109,5	30
M/46250	50	QM/46150/67	M/P41435	M/59625/AX, .. /BX, .. /CX	105	69	15	36	33	91	127,5	30
M/46263	63	QM/46163/67	M/P41436	M/59625/AX, .. /BX, .. /CX	130	69	15	35	41	105,5	141,5	30

Note: Formulae and calculations see page N 1.11.003.01, ** Order plate and shock absorbers separately.

Attention: When using M/46200 cylinders (Ø 40 to 63 mm) an extra top plate must be mounted onto the carriage as the centre line of the shock absorbers has to be within the surface of the carriage.

Lintra Rodless Cylinders M/46000 without top cover

On M/46000 models Ø 25 to 80 mm bore the top cover can be removed and the load connected directly to the yoke to provide a useful space saving feature.



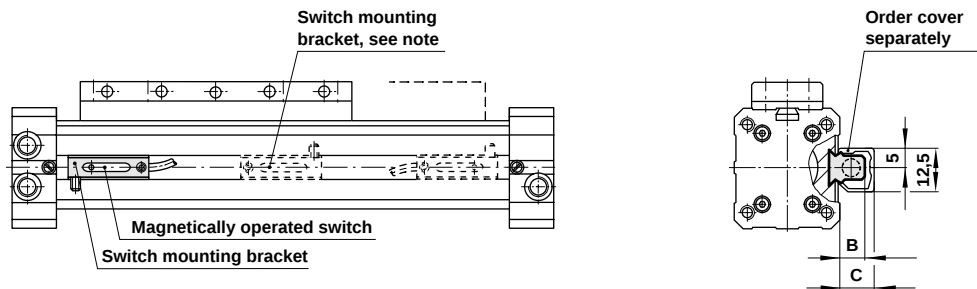
For full dimensions see page N 1.6.002.05

Model	46025	46032	46040	46050	46063	46080
AH	25	40	55	75	90	60
AJ	M 5 - 5 deep	M 6 - 6 deep	M 6 - 6 deep	M 6 - 8 deep	M 6 - 8 deep	M 6 - 8 deep
AK	27	36	36	41	41	41
AL	20	27	27	32	32	32
AM	4,5	6	5	7	6	7
AN	-	-	-	-	-	180



Switch Mounting Brackets for Rodless Cylinders $\varnothing$ 16 to 25 mm

Magnetically operated switches QM/45

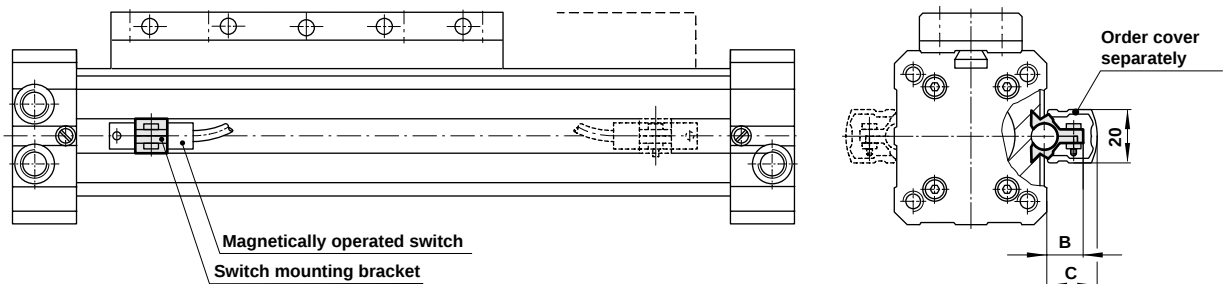


Model (bracket)	QM/45/716/22	QM/45/716/22	QM/45/716/22						
Model (cover)	M/P41443/1/**	M/P41443/1/**	M/P41443/1/**						
$\varnothing$ mm	16	20	25						
B	8	4,5	5						
C	9,5	6	6,5						

Note: When using a cover for stroke > 500 mm additional bracket mountings have to be ordered for every extra 250 mm. **Insert stroke length (mm).

Switch Mounting Brackets for Rodless Cylinders $\varnothing$ 32 to 80 mm

Magnetically operated switches QM/33, QM/34 and QM/134

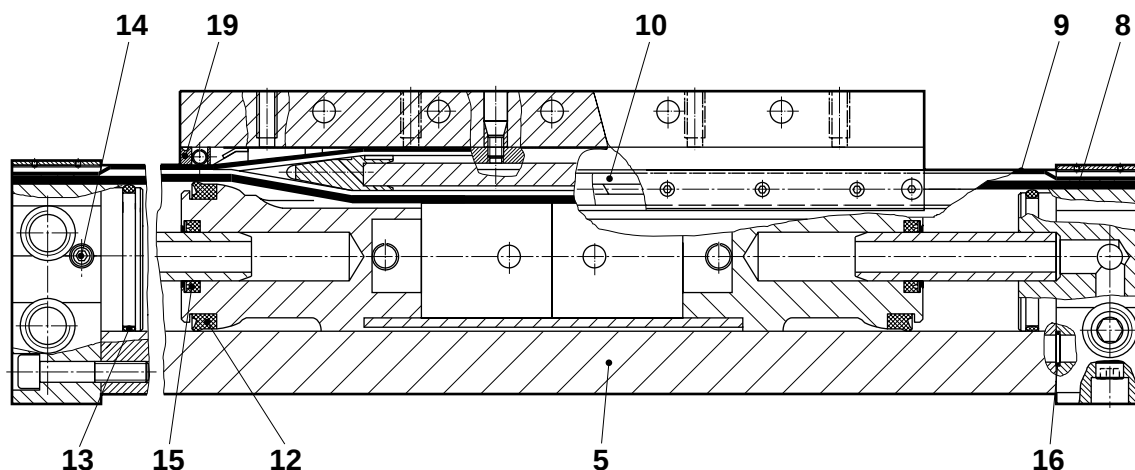


Model (bracket)	QM/33/732/22	QM/33/732/22	QM/33/732/22	QM/33/732/22	QM/33/732/22				
Model (cover)	M/P34899/1/**	M/P34899/1/**	M/P34899/1/**	M/P34899/2/**	M/P34899/2/**				
$\varnothing$ mm	32	40	50	63	80				
B	10	9	9	9	9				
C	14,5	13,5	13,5	13,5	13,5				

Note: When using a cover for stroke > 500 mm additional bracket mountings have to be ordered for every extra 250 mm. **Insert stroke length (mm).



Spares



Model	Spares kit	Comprising Item	Description	Quantity	Seal strip Item 8	Cover strip Item 9	Barrel Item 5	Guide rail Item 10
M/46016,.../M	QM/46016*/88	8 + 9	Seal/cover strip	1	M/P 40270/*	M/P 41101/*	M/P 41097/*	-
M/46020,.../M	QM/46020*/88	12	Seal	2	M/P 40262/*	M/P 19567/2/*	M/P 41067/*	-
M/46025,.../M	QM/46025*/88	13, 14, 16	O-Ring	2	M/P 40262/*	M/P 19567/2/*	M/P 41066/*	-
M/46032,.../M	QM/46032*/88	15	Seal	2	M/P 40344/*	M/P 19587/2/*	M/P 41018/*	-
M/46040,.../M	QM/46040*/88	19	Closer assy.	2	M/P 40263/*	M/P 19606/2/*	M/P 41017/*	-
M/46050,.../M	QM/46050*/88		Grease	1	M/P 40626/*	M/P 19644/2/*	M/P 41064/*	-
M/46063,.../M	QM/46063*/88				M/P 40626/*	M/P 19644/2/*	M/P 41065/*	-
M/46080,.../M	QM/46080*/88				M/P 40715/*	M/P 41076/*	M/P 41071/*	-
M/46116,.../M	QM/46116*/88	8 + 9	Seal/cover strip	1	M/P 40270/*	M/P 41101/*	M/P 41097/*	M/P 41102
M/46120,.../M	QM/46120*/88	10	Guide rail	2	M/P 40262/*	M/P 19567/2/*	M/P 41067/*	M/P 41232
M/46125,.../M	QM/46125*/88	12	Seal	2	M/P 40262/*	M/P 19567/2/*	M/P 41066/*	M/P 41149
M/46132,.../M	QM/46132*/88	13, 14, 16	O-Ring	2	M/P 40344/*	M/P 19587/2/*	M/P 41018/*	M/P 41048
M/46140,.../M	QM/46140*/88	15	Seal	2	M/P 40263/*	M/P 19606/2/*	M/P 41017/*	M/P 41043
M/46150,.../M	QM/46150*/88	19	Closer assy.	2	M/P 40626/*	M/P 19644/2/*	M/P 41064/*	M/P 41269
M/46163,.../M	QM/46163*/88		Grease	1	M/P 40626/*	M/P 19644/2/*	M/P 41065/*	M/P 41197
M/46180,.../M	QM/46180*/88				M/P 40715/*	M/P 41076/*	M/P 41071/*	M/P 41077

* Insert stroke length

Model	Spares kit	Comprising Item	Description	Quantity	Seal strip Item 8	Cover strip Item 9	Barrel Item 5	Bearing **
M/46225,.../M	QM/46025*/88	8 + 9	Seal/cover strip	1	M/P 40262/*	M/P 19567/2/*	M/P 41066/*	QM/46225/12
M/46232,.../M	QM/46032*/88	12	Seal	2	M/P 40344/*	M/P 19587/2/*	M/P 41018/*	QM/46225/12
M/46240,.../M	QM/46040*/88	13, 14, 16	O-Ring	2	M/P 40263/*	M/P 19606/2/*	M/P 41017/*	M/P 34558
M/46250,.../M	QM/46050*/88	15	Seal	2	M/P 40626/*	M/P 19644/2/*	M/P 41064/*	M/P 34558
M/46263,.../M	QM/46063*/88	19	Closer assy.	2	M/P 40626/*	M/P 19644/2/*	M/P 41065/*	M/P 34558
			Grease	1				

* Insert stroke length

** Bearing with pin and locking washer for Ø 25 and 32 mm

Note: Please quote the cylinder type number when ordering spare parts

Yoke assembly

Model	Yoke	Model	Yoke	Model	Yoke	Model	Yoke
M/46016	QM/46016/04	M/46116	QM/46116/04	M/46016/M	QM/46016/M/04	M/46116/M	QM/46116/M/04
M/46020	QM/46020/04	M/46120	QM/46120/04	M/46020/M	QM/46020/M/04	M/46120/M	QM/46120/M/04
M/46025	QM/46025/04	M/46125	QM/46125/04	M/46025/M	QM/46025/M/04	M/46125/M	QM/46125/M/04
M/46032	QM/46032/04	M/46132	QM/46132/04	M/46032/M	QM/46032/M/04	M/46132/M	QM/46132/M/04
M/46040	QM/46040/04	M/46140	QM/46140/04	M/46040/M	QM/46040/M/04	M/46140/M	QM/46140/M/04
M/46050	QM/46050/04	M/46150	QM/46150/04	M/46050/M	QM/46050/M/04	M/46150/M	QM/46150/M/04
M/46063	QM/46063/04	M/46163	QM/46163/04	M/46063/M	QM/46063/M/04	M/46163/M	QM/46163/M/04
M/46080	QM/46080/04	M/46180	QM/46180/04	M/46080/M	QM/46080/M/04	M/46180/M	QM/46180/M/04

Warning

These products are intended for use in industrial compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under 'Technical Data'.

Before using these products with fluids other than those specified, for non-industrial applications, life-support systems, or other applications not within published specifications, consult NORGREN.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.

The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.